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Parental Separation and Well-Being of Youths

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October 2003

Abstract

This paper uses recent data for Germany and a new outcome variable to assess the consequences of parental separation on the well-being of youths. In particular, it is considered how *subjective well-being*, elicited from an ordinal 11-point general life satisfaction question, differs between youths living in intact and non-intact families, holding many other potential determinants of well-being constant using ordered probit regressions. The main finding of this study is that living in a non-intact family has not the hypothesised large negative effect on child well-being.

JEL Classification: I31, J12, C25

Keywords: child welfare, educational attainment, happiness, German Socio-Economic Panel.

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1 Introduction

One of the most important issues of social and family policy relates to the long-term consequences of disadvantaged socio-economic background for the development of a child. What are the conseqences of exposure to child poverty, low parental education – and parental divorce in particular – for the success of a child in later life? And, if causal effects exist, are they large enough to justify any policy intervention, presuming that an appropriate instrument can be identified?

Recent examples for economic studies on the effect of parental divorce on the successful development of children include Ginther and Pollak (2000), Ermisch and Francesconi (2001) and Jenkins and Schlüter (2002) who all consider the educational attainment of youth. Haveman and Wolfe (1995) survey earlier research in this area. Without going into too much detail, it is fair to say that the conventional wisdom espoused by most of these studies is that parental divorce matters, and that it matters quite a lot. However, there is also recent evidence challenging this conventional wisdom. First, on methodological grounds, studies that do not control for family specific effects tend to produce larger estimates than studies using siblings data. In other words, the observed correlation between divorce and child outcome may be attributable, partially or in full, to selection, which means that it is not causal (Björklund and Sundström, 2002).

Second, there is the general issue how "success" should be measured. It is typically defined by schooling attainment (including level finished, school grades or test scores), earnings, health, or the choice of certain "unhealthy" behaviour during adolescence or adulthood (such as drug use, smoking, or teenage pregnancy). Moreover, some studies are concerned with immediate outcomes for children or adolescents, while others look at outcomes for adults later in life. Again, there is some evidence that definition and time horizon matter. For example, for Sweden, a negative effect of divorce on educational attainment has been established when considering grade point average at age 16 by Jonsson and Gähler (1997) but not when considering educational attainment in adulthood by Björklund and Sundström

(2002).

More importantly, the previous research seems to have overlooked an alternative measure of child welfare, the most direct measure conceivable, namely a person's self-assessment of one's own well-being. The present paper attempts to fill that gap, by reconsidering the child welfare debate using recent progress in the analysis of subjective well-being responses from household surveys. This literature has produced fruitful insights in many areas, as surveys by Frey and Stutzer (2002), Easterlin (2001) and Blanchflower and Oswald (2003) amply demonstrate. In this literature, the response to a question such as "on a scale from 0 to 10, how satisfied are you with your life at present" is taken as a valid indicator for personal well-being. Based on this premise, one can then easily quantify the effect of external circumstances on individual well-being, usually relying on regression analysis. While dozens, if not hundreds of studies of this type have been conducted by now, none of them seems to address specifically the effect of parental divorce on well-being of youth. The primary goal of the paper is, then, to provide such evidence, using a representative sample survey of 16-18 year olds in Germany to estimate ordered-probit models of subjective well-being.

2 Data and Basic Hypotheses

The empirical analysis in this paper is based on data from the German Socio Economic Panel (GSOEP). The GSOEP, an annual household survey, was initiated in 1984 and has been used frequently in past research on well-being (see Clark, Georgellis and Sanfey, 2001, Clark, Georgellis and Diener, 2003, Winkelmann and Winkelmann, 1995, 1998, to name but a few). All of this research, however, targeted adult samples. The basic concept of the GSOEP is to randomly sample households and then obtain personal information for all members of that household aged 16 and over, in addition to general household information provided usually by the household head. In principle, therefore, it was always possible to analyse well-being responses of young people, for example those aged 16-18.

However, since the questions were the same for all respondents and not specifically tar-

geted at youth, important information was missing. Therefore, it was decided in 2000 to introduce an additional youth questionnaire. This questionnaire includes detailed questions on schooling, life at home, and parents (who need not live in the same household and therefore be part of the GSOEP sample). The youth questionnaire was run for the first time in 2000 in a pre-test version, and in its final form from 2001 onwards. In future, it will be filled out by all persons turning 17 years old in the year of the interview. Since most interviews are held in the first half of the year, most of these persons are 16 year old at the time of the interview. For various reasons, the 2000 and 2001 youth surveys, the only ones available for use so far, were somewhat different as they included 16-18 year olds.

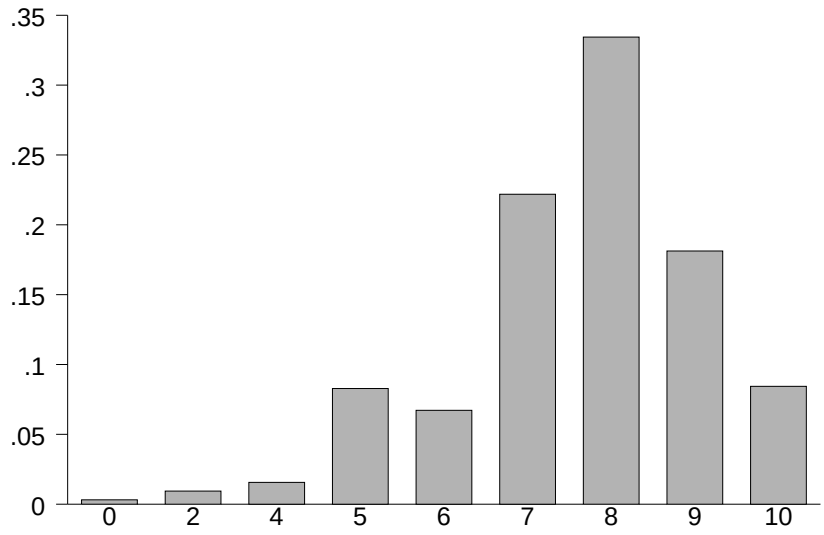
The number of available observations is not yet that large but it will grow with each additional survey. After merging the youth questionnaire with information from the personal and household files, and dropping all records with missing values on any of the relevant variables, I obtain a sample of 640 valid observations.

Figure 1 shows the distribution of the well-being response among the 640 youth. On display are the relative frequencies of the responses to the question: "On a scale from 0 (=completely unhappy) to 10 (=completely happy), where would you put your current happiness?" The modal answer is 8 but there is substantial variation in responses. About 11 percent of all youth give responses of 5 or below, indicating that they are quite unhappy with their lives. The arithmetic mean is 7.6, although strictly speaking, treating such information as cardinal not admissable, and techniques for ordered data will be used later on.

The question is then: how can we explain the variation in subjective well-being among youth, and, specifically, how large is the adverse effect of a non-intact family structure on well-being, if any, without and with controlling for other factors? To answer these questions, I consider a number of potential explanatory factors that can be grouped together under four broad items:

- General socio-economic factors
- Scholastic aptitude

Figure 1: Subjective Well-Being of Youths; Relative Frequencies



- Material well-being
- Family structure

General socio-economic factors

The sample is about evenly split between males and females (*male*). 90 percent of all persons have German nationality (*german*); 68 percent live at the time of the interview in the territory of former West Germany (*west*). Most youths in the sample are still in school (69 percent). 23 percent are engaged in vocational training (typically apprenticeship programs), 3 percent work (either full-time or part-time), whereas 6 percent do nothing. These percentages, as well as means of all other variables, are listed in Table 1.

In principle, young persons in the age range considered here, 16-18, do not need to live at home. For example, in Germany, the age of legal maturity is 18. However, almost all persons in the sample, 99.4 percent, still live with their parent(s). This high proportion

may overstate the true percentage in the population somewhat, since by virtue of the survey design, household members leaving and forming new households, though being followed-up in principle, frequently drop out of the survey in practice, because they cannot be located or refuse further participation. No clear prediction exists, whether *at home* should affect well-being positively or negatively. The same holds for a further variable, *region of childhood*, indicating whether the childhood was mostly spent in a big city, a mid-sized city, a small city or in a rural area.

Scholastic aptitude

Success in school can be expected to have a considerable influence on personal development and well-being, for instance by building up self-esteem. This factor is captured in a number of different ways. First, there is the type of general school a young person has completed, visits currently, or plans to visit and complete in the future. The German school system features a clear hierarchy. The least ambitious curriculum is offered by *Hauptschule* which can be left after 9 or 10 years of schooling, followed by *Realschule*, a 10 year program, and *Gymnasium*, a 13 year program (which was recently cut to 12 years). In the sample, 34 percent of youth opted for the Gymnasium, 37 percent for Realschule and 19 percent for Hauptschule. The remaining 10 percent leave school with no degree at all.

The GSOEP youth survey also contains information on grades (either current ones for those still at school or the latest available ones for those who have already left school). Grades are provided for three separate subjects, German, Mathematics, and a foreign language. I define an indicator variable *good student*, which is one if the student has reached a level of 1 (excellent) or 2 (very good) (on a scale from 1 to 6, where 4 is the passing mark), in at least two subjects. By this measure, 32 percent of all persons are or were "good students". In addition, there is information on whether or not a student had to repeat a grade (*repeat*) which is interpreted as a signal of lower scholastic aptitude. This applied in 19 percent of all cases.

Some additional aspects of educational achievement may be captured by the type of intellectual environment a person was exposed to while growing up. The most obvious indicator is the educational attainment of the parents. I use here two indicators variables (*mother-gym* and *father-gym*) that are one if the mother or father, respectively, completed the highest general schooling level. In addition, I control for the number of books present in the household. Clearly, the factors mentioned in this section are strongly interrelated. Parental education and number of books are very strong predictors of the actual educational attainment of the child in these data, a standard result in the literature. However, it may still be worthwhile including them as additional variables, as they may have separate effects on subjective well-being that go above and beyond the effect of own educational attainment.

Material well-being

The most direct measure of material well-being is available household income. I use here information on household net income in the year prior to the interview. By construction, therefore, I can only identify the short-term effect of income on well-being. Alternatively, one can be interested in how material deprivation during earlier childhood (i.e., child poverty) affects later well-being. Unfortunately, the data required for identifying such long-term effects are not available. Of course, under the additional assumption that income remains relatively stable over time, the effect of current income combines long and short term into a single effect.

A second indicator of material well-being relates to the living circumstances. The variable *own room* is one if the adolescent has his/her own bedroom. This is the case for 85 percent of all observations. Somewhat related is a further indicator, namely whether or not the person is a *single child*. 12 percent in the sample are. Many past studies have shown that the concept of "sibling rivalry" has a firm empirical basis. In general, the resources (material, but not necessarily only so) available for a child are decreasing in the presence of more children and single children therefore usually enjoy a higher material well-being, *ceteris paribus*. This is

not to say that being a single child cannot have also other consequences on child development that go beyond the purely material aspects.

Family structure

To what extent are disrupted family structures responsible for low well-being? The data offer two measures of family structure. The first one refers to the situation at the time of interview. The young respondents are asked whether s/he lives with both parents, with the mother only, with the father only, or with none of the parents. The last three possibilities are grouped together in a single variable *non-intact* family. We would expect that adolescents living in a non-intact family have a lower subjective well-being than others. In addition, all respondents provide retrospective information on the number of years spent in an intact family structure during the first 15 years of their life. From this information, I calculate the proportion of *non-intact years* among the first fifteen years of life, in percent. This variable measures how cumulative past disruptions affect current well-being.

3 Methods

The determinants of well-being are analysed using a simple cross-section ordered probit model. In such a model, the conditional expectation of an underlying latent variable y^* is modelled as a linear combination of the various regressors

$$\mathrm{E}(y^*|x_1, \ldots, x_k) = \beta_0 + \beta_1 x_1 + \ldots + \beta_k x_k$$

Under the additional assumption of standard normally distributed errors, the conditional expectation together with a set of threshold values defines a conditional probability model for the potential outcomes $0, 1, \ldots, 10$, and the model parameters are estimated by the method of maximum likelihood.

There are several ways to interpret the parameters of the model. One can compute marginal probability effects, i.e., the change in the probability $\Delta P(Y = j), j = 0, 1, \ldots, 10$

associated with the change of given a regressor, in the case of dummy variables from 0 to 1, keeping everything else constant. Another simple way to assess what factors matter most is tracing out "iso well-being" contours. For example, if $\beta_1 = \beta_2$ then an increase in x_1 by one unit requires a decrease in x_2 by equal amount to keep overall well-being constant.

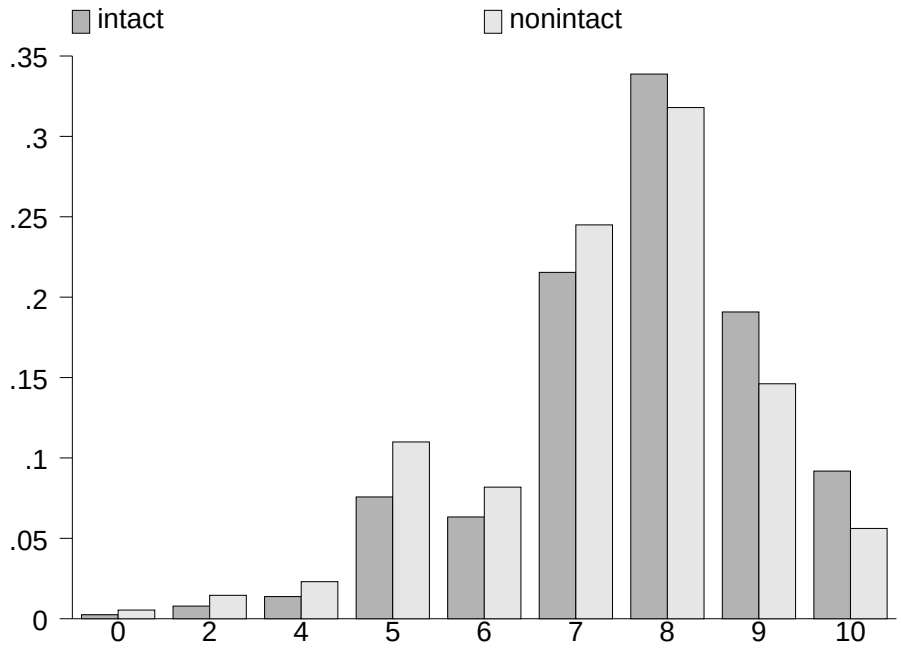
When making such comparisons, one has to keep in mind that the two non-binary regressors, income and number of books, are measured on a logarithmic scale. This is in the spirit of logarithmic utility functions used elsewhere in economics. It implies decreasing marginal utility of income (or books). Specifically, proportional income changes are assumed to have a constant effect of income, i.e., for richer households larger absolute income changes are needed to obtain the same increase in well-being than are necessary for poorer households. For small income changes, the marginal effect of income on the latent well-being indicator is well approximated by $\beta_{\text{inc}} \times \%\Delta income/100$. For larger income changes, this approximation may be poor. The true marginal effect can be overestimated by quite a bit. For example, the effect of doubling of income is $\beta_{\text{inc}} \times 0.69$, rather than β_{inc} as suggested by the approximation. Of course, before considering the magnitudes of the diverse effects, one should test, and reject, the null hypothesis that the coefficients are zero.

4 Results

4.1 Subjective Well-Being

Five different models were estimated. They differ in the number and type of regressors that are included. In the simplest model, the ordinal well-being indicator is regressed on a single variable, *non-intact*. In a second model, both *non-intact* and *non-intact years*, the cumulative past exposure to living in a non-intact family during the first fifteen years of life, in percent, are included. The remaining three regressions add successively more controls to assess how the specific effect of family structure changes in extended models where the potential of omitted variable bias is reduced.

Figure 2: Parental Separation and Subjective Well-Being of Youths



The regression results are displayed in Table 2. In the first column, we see that the expected underlying latent well-being index is lower for adolescents living in non-intact families than in intact families. The point estimate is -0.258, and it is highly significant. The particular value has no interesting interpretation *per se*. To understand its quantitative meaning, one has to compute marginal probability effects, i.e., $\widehat{P}(Y = j|\textit{non-intact} = 1) - \widehat{P}(Y = j|\textit{non-intact} = 0)$. The predicted probabilites are shown in Figure 2. For example, living in an intact family increases the predicted probability of a "10" on the 0-10 scale by 3.6 percentage points. The predicted probability of low well-being (a response of 5 or below) increases by 5.3 percentage for those living in a non-intact family relative to those living in an intact family.

In the second column of Table 2, I add a second variable, namely the proportion of time spent in a non-intact family up to the age of 15. This variable captures the cumulative effect of past exposure to living in a non-intact family, rather than the current situation

that is described by the variable *non-intact*. A-priori, one might think that both variables have independent effects on well-being. And indeed, both estimated coefficients are negative. To make the coefficients comparable, consider a "worst-case" scenario of a youth who has lived in a non-intact family for all her life. The contribution to current well-being from past exposure is then -0.00146×100, which is less than the -0.195 coming from current status. Therefore, the present matters more than the past.

The two effects are jointly significant at the 5% level, as a likelihood ratio test shows. However, the two variables are closely correlated and the specific effects are estimated very imprecisely. For example, in only 12 cases have there been past incidences of non-intactness among youths who currently live with two parents. Also, 20 more observations are lost due to missing information on the duration variable. As a consequence, I decided to drop the duration variable from the further analysis and concentrate on the *non-intact* variable instead.

Starting from the preliminary conclusion, that there is indeed a negative association between non-intact family and well-being, I will now explore in more detail whether or not this association is spurious. To begin with, parental separation in most cases means lower income and reduced consumption levels. In the present data, family income in non-intact families is about 30 percent lower than family income in intact families. In model (3), I test whether *non-intact* has an independent effect on subjective well-being of youths, accounting for the confounding effect of material well-being, i.e., holding income and other aspects of material well-being constant. As a result of including these additional controls, the *non-intact* coefficient drops by more than 20 perecent, and it is no longer statistically significant. The income variable is positive and significant, whereas the other indicators of material well-being, having an own room and being a single child, are insignificant.

The 4th model presented in Table 2 adds the set of variables capturing the general socio-economic background. Interestingly, *german* (i.e., having german citizenship rather than being a foreigner) has a large negative effect on reported well-being. One speculative expla-

nation is that this difference may express differences in expectations, which, if unfulfilled, lower subjective well-being. Youths living in the West are more satisfied with their lives than youths living in the East. Well-being is also significantly higher among those enrolled in school relative to those who are economically inactive. Finally, the 5th model in Table 2 adds variables related to schooling and scholastic aptitude. It turns out that neither the type of school visited, nor the parental education background matters for well-being. The only significant effect is observed for the variable *good student*. This variable, to recapitulate, is constructed from school grades, and it is one if a good grade is reported in at least two out of the three relevant subjects. Good students report significantly higher levels of well-being than others. This result is not too surprising, as being a good student should for example enhance self-esteem and thereby personality development.

In this most comprehensive model, the coefficient of *non-intact* has been reduced to -0.139, almost half of the unadjusted effect. It is not statistically significant from zero, and the point estimate is also small relative to other effects. Case in point is the variable *good student* which has an estimated effect of +0.308, more than twice as large in absolute terms. Based on this evidence, one can conclude that living in a non-intact family is relatively unimportant for subjective well-being of youths.

4.2 Educational Attainment

Having found that there is no substantial negative effect of living in a non-intact family *per-se*, *ceteris paribus*, one may object that this is not the right question to ask. If, for example, non-intact family situations cause lower educational attainments, then one should include this effect when computing the overall cost of parental separation, and not "control" for it. Evidence on the link between educational attainment and living in a non-intact family is shown in Table 3, where two probit regressions of educational attainment are displayed. In the first model, the dependent variable describes whether or not the person attended Gymnasium, the highest level of secondary schooling in Germany. In the second model, the

dependent variable is one if the person is a good student and zero otherwise.

These results are of independent interest; being cross-section estimates with a single child observation per-family only, they do not control for unobservable family effects. However, they offer a richer set of controls than is available in many other studies. Reading down the first column of Table 3, we see that parental education, in particular the mother's education, is the quantitatively most important determinant for attending Gymnasium. Father's education and the number of books at home matter as well. Children growing up in a rural area, and in the West, are also less likely to attend Gymnasium, as are boys compared to girls. The effect of non-intact family is negative, and comparable in magnitude to being a boy, but much smaller than having a mother who attended Gymnasium herself.

There are some notable other differences between the determinants of schooling level and grades: the mother's education level and the place of childhood are unimportant for grades whereas they matter for the access to Gymnasium. Somewhat unclear is why having an own room at ones disposition reduces the probability of having good grades. Importantly, there is no significant effect of living in a non-intact family as far as being a good student is concerned. If one combines this result with the previous evidence – that well-being is higher for good students whereas school type visited has no effect on well-being – one is forced to conclude that the evidence speaks against a causal channel going from non-intact family via educational attainment to subjective well-being.

5 Conclusions

The main finding of this study is that living in a non-intact family has not the hypothesised large negative effect on child well-being. This conclusion rests on two pieces of evidence. First, the point estimate of *non-intact family* is statistically insignificant, i.e., the null hypothesis of no effect cannot be rejected. Admittedly, this is only weak evidence, as the probability of a type two error of not rejecting a false hypothesis is unknown. More important, therefore, is a second piece of evidence, namely the magnitude of the point estimate

compared with the magnitude of other estimates. Here, I find that other factors, such as living in the eastern part of Germany, being German, or being inactive have all much larger effects on well-being than living in a non-intact family.

Some issues of causality were discussed. The basic technique employed in this paper was to make youth in intact and non-intact families as similar as possible by including a large number of control variables. Still, there would be some problem of interpreting the effect of parental separation (if there was one), since there is a potential selection problem: marriages that eventually end in separation may already be unfavourable for child well-being long before it comes to that. Children may be worse off by suffering parental conflict than by a separation. However, in the present case, this objection is not relevant since I do **not** find a negative effect of separation on well-being, once I hold constant other determinants of well-being.

In fact, not finding an effect can be explained by a number of factors. First of all, there can be a habituation effect: people get used to everything, including living with a single parent only. Second, as mentioned before, some of the so-called "intact" families are likely to be disfunctional as well. In such cases, outright divorce might be preferable and improve the well-being of the child. In either case, it is not divorce *per se* that matters. In particular, this study provides no argument against the increasing adaptation of no-fault divorce legislation from the child well-being point of view.

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Table 1: Descriptive Statistics (N=640)

	mean	standard dev.
happy	7.601	1.545
non-intact family	0.210	0.408
non-intact years (in %)	49.9	27.6
log income	8.504	0.419
own room	0.850	0.357
single child	0.118	0.323
male	0.493	0.500
german	0.904	0.293
west	0.684	0.465
lives at home	0.993	0.078
current status (reference: inactive)		
school	0.689	0.463
vocational training	0.226	0.418
work	0.028	0.165
region of childhood (reference: large city)		
mid-sized city	0.190	0.393
small city	0.257	0.437
rural area	0.337	0.473
school degree (reference: none)		
hauptschule	0.190	0.393
realschule	0.368	0.482
gymnasium	0.340	0.474
good student	0.318	0.466
repeat	0.189	0.391
father gymnasium	0.146	0.354
mother gymnasium	0.092	0.289
log number of books	4.719	1.372

Table 2: Ordered Probit Results for Well-Being of Youth

	(1)	(2)	(3)	(4)	(5)
non-intact family	-0.258**	-0.195	-0.188	-0.170	-0.139
	(0.100)	(0.153)	(0.105)	(0.108)	(0.109)
non-intact years (in %)		-0.001			
		(0.003)			
log income			0.232*	0.171	0.194
			(0.104)	(0.111)	(0.123)
own room			-0.168	-0.080	-0.042
			(0.116)	(0.125)	(0.129)
single child			-0.009	0.048	0.037
			(0.128)	(0.130)	(0.130)
male				-0.022	0.058
				(0.083)	(0.086)
german				-0.389*	-0.351*
				(0.155)	(0.160)
west				0.213*	0.285**
				(0.095)	(0.099)
school				0.375*	0.322
				(0.183)	(0.189)
vocational training				0.286	0.217
				(0.195)	(0.199)
work				0.346	0.288
				(0.300)	(0.304)
lives at home				0.055	0.128
				(0.528)	(0.529)

Table 2: continued

	(1)	(2)	(3)	(4)	(5)
mid-sized city				0.013	0.007
				(0.129)	(0.130)
small city				0.003	0.022
				(0.121)	(0.122)
rural area				0.082	0.051
				(0.116)	(0.118)
hauptschule					0.088
					(0.170)
realschule					0.269
					(0.148)
gymnasium					0.193
					(0.158)
good student					0.308**
					(0.095)
repeat					-0.023
					(0.114)
father gymnasium					-0.153
					(0.134)
mother gymnasium					-0.083
					(0.167)
log number of books					-0.013
					(0.036)
Observations	640	620	640	640	640
Log-likelihood	-1105.8	-1069.9	-1102.5	-1092.5	-1084.0

Source: German Socio-economic Panel, 2000 and 2001.
Standard errors in parentheses.
* significant at the 5% level; ** significant at the 1% level

Table 3: Probit Results for Educational Attainment

	Gymnasium	Good Student
non-intact family	-0.459**	-0.201
	(0.158)	(0.147)
log income	0.251	0.183
	(0.165)	(0.162)
own room	0.338	-0.541**
	(0.183)	(0.162)
single	0.056	-0.062
	(0.174)	(0.173)
male	-0.453**	-0.531**
	(0.114)	(0.110)
german	-0.076	-0.161
	(0.219)	(0.211)
west	-0.340**	-0.425**
	(0.129)	(0.125)
mid-sized city	-0.176	0.001
	(0.178)	(0.170)
small city	-0.206	-0.171
	(0.166)	(0.163)
rural area	-0.370*	0.149
	(0.159)	(0.153)
father gymnasium	0.463**	0.440**
	(0.174)	(0.170)
mother gymnasium	0.950**	0.036
	(0.231)	(0.211)
log number of books	0.203**	0.144**
	(0.050)	(0.047)
constant	-3.178*	-1.627
	(1.332)	(1.310)
observations	640	640

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